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Loners, Colleagues, or Peers? Assessing the Social Organization of Radicalization

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Abstract This study explores the utility of a sociological model of social organization developed by Best and Luckenbill (1994) to classify the radicalization processes of terrorists (i.e., extremist perpetrators who engaged in ideologically motivated acts of violence) who are usually categorized as loner or lone wolf attackers. There are several organizational frameworks used to define or classify violent acts performed by individuals who may or may not have ties to extremist groups, but these studies largely ignore the role of social relationships in radicalization and the extent to which they inform our knowledge of terror. To address this gap, we apply the Best and Luckenbill model of social organization using a qualitative analysis of three case studies of four lone actor or small cell terrorists. The findings demonstrate lone actors are not always true loners in the context of radicalization, and highlights the ways that the Internet and social ties foster the radicalization processes of terror.

Keywords Social organization · Radicalization loners · Lone wolf · Terror · Extremism

Scholarly efforts to better understand terrorism have increased since the attacks on September 11th, 2001 (Silke, 2008). Terrorism research taking a criminological perspective has substantially increased, as these acts primarily involve the unlawful use of force or violence against civilian populations (Freilich, Chermak, & Caspi, 2009; Schmid & Jongman, 2005) and are usually prosecuted under existing criminal codes (LaFree, Dugan, & Miller, 2015). Most studies examine foreground and situational dynamics that may predict individual involvement in acts of violence in support of an

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ideology (Freilich, Chermak, & Gruenewald, 2015; Freilich, Adamczyk, Chermak, Boyd, & Parkin, 2015; Hamm, 2007; LaFree & Bersani, 2014; Parkin & Freilich, 2015; Smith & Damphousse, 2009).

Terrorism researchers have developed a range of organizational and offender typologies to classify acts of terror and extremism, including acts performed by both lone wolves (Bates, 2012; Pantucci, 2011; Phillips & Pohl, 2012), and cell-structured groups such as Al-Qaeda (Asal & Rethemeyer, 2008; Davis, Martini, & Cragin, 2017; Neumann, Evans, & Pantucci, 2011). A few studies also use statistical analyses to examine the network structures observed in terror groups to understand the linkages between actors (Koschade, 2006). Others focus on the behavior of terrorist organizations specifically, highlighting differences between violent and non-violent groups and exploring why some organizations die and others survive (Chermak, Freilich, & Suttmoeller, 2013; Freilich et al., 2009; Suttmoeller, Chermak, & Freilich, 2015).

These studies are insightful and demonstrate that relational ties have a role in the facilitation of acts of terror, particularly the complexity of attacks based on the presence or absence of social connections. At the same time, few have attempted to classify the organizational practices influencing the radicalization process, whereby individuals come to accept a radical or extremist ideology that may be used as a basis for engaging in violence (Bakker, 2006; Borum, 2011a, 2011b; Moskalenko & McCauley, 2011; Hamm, 2007; Monahan, 2012; Silber, 2011; Simi & Futrell, 2010; Stern, 2004). Radicalization theorists have proposed a range of frameworks based on foreground and situational dynamics to account for an individual's risk of accepting an ideology (Bartlett & Miller, 2012; Borum, 2011a, 2011b). They also recognize that radicalization is a social process stemming from exposure to radical messages via peers and family relationships in the real world, as well as online via websites, forums, and social media (Hegghammer, 2013; Holt, 2012; Weimann, 2011).

Such a perspective may not recognize the nuance of this process, as evident in the growing concern over "self-radicalization," where an individual seeks out radical messages expressed via text, video, or other means on-line in the absence of broader social ties to groups or terrorist networks (Bartlett & Miller, 2012; Borum, 2013). Some attribute self-radicalization to the rise of the Internet as a messaging platform for radical groups, such as ISIS, enabling individuals to accept an ideology based on exposure to pre-recorded messages and content rather than via face to face meetings and recruitment strategies (Bartlett & Miller, 2012). At the same time, social networking platforms like Twitter and Facebook enable the formation of weak social ties to peripheral members of radical groups that may facilitate radicalization (Bartlett & Miller, 2012; Holt, Freilich, & Chermak, 2016). As a result, the increasingly social nature of the Internet may increase the potential for self-radicalization relative to more oblique forms of social ties.

Research is thus needed to investigate the extent to which radicalization to violence exists along a continuum of social connectivity. Understanding the social organization of radicalization can refine our understanding of the social dynamics influencing individuals' acceptance of violent ideological beliefs and their willingness to act on those ideas (Holt et al., 2016). It is also important to explore the importance of online relationships relative to real world ties in the indoctrination and messaging of radical beliefs. This study addressed this gap in the literature through a qualitative case study analysis of four individuals who engaged in three recent acts of lone wolf terror and

extremist violence. We utilized Best and Luckenbill's (1994) five category sociological model of social organization, and found that radicalization may operate along a continuum of social relationships, including on and off-line ties. Our study ends with a discussion of the implications of this analysis for understanding of radicalization models and terrorism research generally.

Organizational Frameworks of Terror and Extremism

A significant effort has occurred in the past 10 years to better understand the foreground and situational processes that radicalize an individual towards extremism and violent behavior (Bjorgo & Horgan, 2009; Blee, 2002; McCauley & Moskalenko, 2011; Simi & Futrell, 2010; Taylor & Horgan, 2006; Wiktorowicz, 2004). The utility of these theories are challenged by the fact that while many may be exposed to radical messaging, only a small proportion of individuals ever actually engage in acts of violence (Borum, 2011a). Thus there is a need to develop a better understanding of nuanced differences between and among terrorists with respect to how they were radicalized, and from what sources. There are likely to be significant differences in the nature of radicalization and violent action when comparing actors across ideological types (Chermak & Gruenewald, 2015; Hewitt, 2003). Also, the nature of their interactions with other extremists and groups will vary considerably (Hamm & Spaaij, 2017; Hewitt, 2003; Pantucci, 2011; Phillips & Pohl, 2012; Spaaij, 2012).

To that end, there are a range of terms and typologies currently used to classify actors on the basis of connections with specific groups, ideological motivation, length of offending, and participation in violent acts (Stern, 2004). There has been specific emphasis on segmenting lone attackers, such as Stern's (2004) focus on varying rationales for attacks and personality traits. Similarly, Phillips and Pohl (2012) classified individual actors relative to their willingness to take or avoid risks. There is, however, some variation among scholars when defining loners in the terrorism literature (Schuurman, Bakker, Gill, & Bouhana, 2017).

Our definition of loners and lone wolves is consistent with the work of several terrorism scholars (Pantucci (2011); Schuurman et al., 2017; Gill, Horgan, & Deckert, 2014; Gruenewald, Chermak, & Freilich, 2013, 2013; Spaaij, 2010, 2012). Specifically, loners operate individually and do not belong to or have evident affiliations with extremist groups. Lone wolves also operate individually, but differ from loners by affiliating with other active extremists operating within a group context. The research in this area discusses how loners and lone wolves are actually quite different. For example, Gruenewald et al. (2013) found that loners are more likely to have a military background, more likely to be married, more likely to commit a suicide attack, and more likely to have a mental illness. Schuurman et al. (2017) argued that loners are not particularly lethal and not particularly skilled in carrying out terrorist acts. Importantly, research indicates that labeling a person as a loner does not fit into the view that the loner is significantly distant from others socially from peers or extremists. Gill, Horgan, and Deckert (Gill et al., 2014; see also Gill & Corner, 2015; Gill et al., 2017) found that loners are connected to others in interesting ways, such as through virtual Internet linkages, and these connections provide loners opportunities to learn tactics from others as well as be radicalized.

These operational typologies place minimal emphasis on radicalization processes, though they may recognize ties to radical groups that may communicate values or beliefs (Phillips & Pohl, 2012; Spaaij, 2012). For instance, Pantucci (2011) and Hamm and Spaaij (2017) recognize the role of the Internet as a tool for linking actors together and providing access to information that can be used to facilitate attacks. The extent to which Internet access and on-line associations actually influence individual behavior is left as a speculative component of these frameworks (Pantucci, 2011; Weimann, 2011). For example, Pantucci (2011) argued that "it is difficult to truly know how much a person's psychological outlook is formed solely by material they found online" relative to real world influences on behavior (p. 25).

A more refined set of measures is needed to capture the extent to which individuals accept and engage in a broader subculture of terror or extremism as a part of the radicalization process, inclusive of both on and off-line relationships (Holt et al., 2016). An individual's expression of acceptance of extremist belief systems on and off-line demonstrate their enculturation into a movement in ways that may be more enlightening as to their association with a movement than tacitly announced allegiances or oaths to a specific group (Holt et al., 2016; Holt, Freilich, & Chermak, 2017). This information is inherently valuable to classify radicalization along a social continuum dependent upon that person's association to a specific group or movement.

Identifying the Social Organization of Radicalization

To improve our understanding of radicalization, a sound typology is needed that is theoretically parsimonious and accounts for the disconnected or networked nature of radicalization across terrorists and extremist actors (Best & Luckenbill, 1994; Martin, 2006). Typologies help clarify the nature of the phenomenon under study and often highlight the nuance that might be involved. Typologies are especially useful to policymakers and law enforcement in crafting tailored responses, as opposed to broad one size fits all policies. Smith's (1994) research on American terrorism is one example.

McDevitt, Levin, & Bennett, (2002) typology of hate crime offenders is a second example. It is the pre-eminent framework used by law enforcement and scholars to categorize individual hate crime offenders (Freilich & Chermak, 2013). Levin and McDevitt's typology of bias offenders includes thrill-seeking, reactive/defensive, retaliatory, mission, and bias peripheral/mixed offenders. Thrill-seeking hate crime offenders commit the crime for fun and any vulnerable minority might be targeted. Offenders are often groups of juveniles, with no criminal records, who use non-gun weapons. Sometimes alcohol and substance abuse is involved, and these crimes tend to occur in public locations like parks and streets (McDevitt et al. 2002; Messner, McHugh, & Felson, 2004).

On the other hand, mission hate crime offenders are extremists who believe the minority group they target is evil. Mission offenders, unlike thrill seekers, usually act alone and appear to deliberately choose their victims. They are more likely to be members of hate groups, are more likely to commit deadly attacks, to be suffering from a mental illness, and to commit suicide or be killed during or after their attack. Law enforcement agencies have relied upon these empirical findings to craft distinct investigative and prevention practices for each category.

Sociological models of social organization provide valuable frameworks to operationalize and measure relationships between deviants, and how such relationships function on or off-line (Best & Luckenbill, 1994; Holt, 2009). Best and Luckenbill (1994) developed a comprehensive and well applied social organization framework to identify associations between individuals and groups, and the transactions they engage in. This framework can also be used to understand how relationships affect individual positions within a clique or network as well as the role, or pattern of action they play in larger social networks and subcultures. In turn, social organization frameworks can be used to explore the presence or absence of collegial associations between actors, coordinated or purposive roles between participants, managerial positions, and duration over time (Adler & Adler, 2005; Best & Luckenbill, 1994; Decker, Bynum, & Weisel, 1998; Holt, 2009: Holt, 2013; Meyer, 1989). .

Best and Luckenbill (1994) argue that we can understand both the organization of deviant actors, and deviant acts themselves. Deviance is based on the concept of transactions, whereby behavior is focused toward a particular goal. In deviant transactions, participants are focused toward outcomes that bring some gratification. Additionally, transactions have some division of labor that can vary from an individual act to a multi-person scheme with distinct roles for each participant. Finally, transactions have "flexible coordination," such that individuals can adapt their behavior to meet a particular situation or disruption (Best & Luckenbill, 1994: 75).

Best and Luckenbill (1994) also argue that deviants are organized in different ways based on the transactions they engage in over time. The structure of social relationships also vary based on any division of labor between participants, how frequently and successfully members of the group associate with one another, if they participate in deviance as a collective or alone, and how long their deviant activities extend over time and across virtual or real spaces (Best & Luckenbill, 1994). These characteristics create a continuum of organizational sophistication with five forms of deviant organization that aligns nicely with the existing terrorism research frameworks: loners, colleagues, peers, teams, and formal organizations (see Table 1).

Loners are the least sophisticated group, as they associate with one another infrequently and do not participate in deviant acts together. Colleagues are the next most sophisticated group, because individuals create a deviant subculture based on their shared knowledge. This provides a way for participants to share information and

Table 1 Best and Luckenbill's (1994) Social Organization Framework

Form of organization	Characteristics			
	Mutual assosiation	Mutual participation	Elaborate division of labor	Extended organization
Loners	No	No	No	No
Colleagues	Yes	No	No	No
Peers	Yes	Yes	No	No
Teams	Yes	Yes	Yes	No
Formal organizations	Yes	Yes	Yes	Yes

From Best and Luckenbill (1994): 12

evaluate others associated with the subculture. Despite this connection, colleagues are unsophisticated in their social organization: they do not offend together, have no division of labor, nor do they exist over time. Peers have all the characteristics of colleagues, and also offend together but are relatively short lived with no division of labor. Teams are more sophisticated than peers. They last for longer periods of time and have an elaborate division of labor for engaging in deviance. Teams tend to be relatively small in size, seek to garner money or power, and attempt to regularly operate while evading law enforcement. The formal organization is the most sophisticated deviant organization that Best and Luckenbill (1994) include in their framework. Formal organizations have all the elements of teams, as well as extended duration across time and space.

The Best and Luckenbill (1994) model provides a high degree of flexibility in the identification of organizational structures within deviant communities. In fact, the continuum of organizational behavior identified can encapsulate more traditional perspectives of organization, such as hierarchical organizations or less formal network models driven by normative relationships that involve reciprocal exchanges between participants. Best and Luckenbill (1994) also recognize that deviants involved in a specific activity can organize in different ways based on location or points in time. This provides researchers with a mutable flexible framework that can adjust over time to better document the organizational practices of offenders.

Initially, the Best and Luckenbill (1994) framework may appear to have limited applicability to radicalization. Examining the underlying definitions and categories demonstrates the value of this framework for terror and extremist violence which the primary outcome of concern related to radicalization. Whether an act is performed alone or with others, Best and Luckenbill (1994) state "deviance is socially organized behavior in the sense that the performance is shaped by the actor's social relations" (p. 97). In this respect, research on terrorism and extremism has identified that radicalization is a process based on interactions with others on or off-line (Bjorgo & Horgan, 2009; Holt et al., 2016, 2017; McCauley & Moskalenko, 2011; Simi & Futrell, 2010). In fact, radicalization can be conceived of as a form of subcultural indoctrination where individuals learn the values and norms of an extremist or radical ideology and the ways to properly express their beliefs (Holt et al., 2016).

The ability to connect to a larger community of radicals and extremists on or off-line may not be required for all individuals who become radicalized. It is possible that individuals may come to accept extremist views because of a self-selection process, whereby they seek out videos, audio recordings or written materials posted on-line or off-line by extremist groups. They may not ever directly interact with others who are part of a movement, but rather obliquely engage with the broader community through the identification of materials they produce. A refined typology such as that of Best and Luckenbill (1994) enables the separation of offenders on the basis of being true loners, wherein they have no social connection to others, or colleagues on the basis that they are radicalized based on social ties to a broader radical subculture on or off-line. Those who play an active and direct role in the radicalization of others may be viewed as a peer within this framework, and groups that have a regimented recruitment and radicalization structure such as ISIS may represent a team or formal organization.

To assess the utility of a sociological framework of social organization to account for the radicalization process, we examined this issue using three case studies of four

individuals associated with acts of terror or ideologically-motivated violence. These examples have all been labeled as acts of lone wolf terrorism, though this definition may not accurately reflect the social ties involved in their process of radicalization or the extent to which it involved on and off-line associations. The results demonstrate the value of a refined social organization framework to accurately classify the process of radicalization regardless of whether the individual engaged in acts of violence alone or in concert with others.

Data and Methods

To assess the social organization of radicalization, case studies were conducted using three recent incidents of violence performed by four actors who were labeled loner or lone wolf attacks by the popular press, and would likely fall into either or both of these categories based on existing research frameworks: 1) Omar Mateen (the Pulse Night-club shooter), 2) Dylann Storm Roof (responsible for church shooting in South Carolina), and 3) Tamerlan and 4) Dzhokhar Tsarnaev (performed the Boston Marathon bombing; Bates, 2012; Hamm & Spaaij, 2017; Pantucci, 2011; Phillips & Pohl, 2012; Spaaij, 2012). These incidents were selected because they were committed within the last four years to best capture the role of the Internet and social media during an age where there is the greatest proliferation and use of these features in an actor's potential radicalization process. The cases were purposively selected from the U.S. Extremist Crime Database (Freilich, Chermak, Belli, Gruenewald, & Parkin, 2014), an open-source, relational database that includes event and offender-level information on criminal activities of jihadi and far-right terrorists. Sources of information originate from publicly available records, such as print and Internet news media accounts, advocacy group reports, scholarly publications, in addition to government reports, court documents, and correctional system reports.

The ECDB's data is uniquely suited for conducting case studies because its thorough inventory of information from a variety of sources include rich detailed descriptions of the offenders and the crimes they committed. The ECDB has shown to be a valid data source for studying violent and non-violent American terrorism and extremism (Chermak, Freilich, Parkin, & Lynch, 2012; Chermak et al., 2013). Prior studies have used ECDB data to craft contextualized case studies of both offenders and organizations (Freilich & Chermak, 2009; Kelley & Gruenewald, 2015; Gruenewald, Dooley, Suttmoeller, Freilich, & Chermak, 2016).

ECDB researchers conducted searches for each of the four actors using 22 search engines to identify news sources,[1] as well as reviews of extant terrorism databases (the American Terrorism Study; the Global Terrorism Database/, official sources (including Federal Bureau of Investigation reports and congressional testimonies), and watch-group reports (the Anti-Defamation League; Southern Poverty Law Center) to identify details on each person's life, information surrounding the extent to which they were

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[1] The search engines used in this analysis include Lexis-Nexis; Proquest; Yahoo; Google; Copernic; News Library; Infotrac; Google Scholar; Amazon; Google U.S. Government; Federation of American Scientists; Google Video; Center for the Study of Intelligence; Surf Wax; Dogpile; Mamma; Librarians' Internet Index; Scirus; All the Web; Google News; Google Blog; and Homeland Security Digital Library.

radicalized by various sources, and involvement with radical groups or individuals tied to such groups on and off-line (Freilich et al., 2014).

Data was developed from materials identified across all of these sources, reducing the likelihood of any systematic biases present in results for each person (Freilich et al., 2014; Freilich & Pridemore, 2006). Table 2 provides a breakdown of sources for each case study. A total of 138 documents were identified for all four actors, with the majority of sources coming from news media reports (119; 86.2%). Additionally, the majority of sources involved reports on Omar Matteen (76; 55%), which may be due to the lethality of the incident. While hundreds of documents were initially identified, many of these items were duplicate news stories or coverage that provided no new information and simply summarized known details. As a result, these counts directly reflect materials referenced in this analysis.

The primary focus of this study was in understanding the extent to which access to social ties on or off-line served as the primary or secondary source of information on radical ideologies, whether the individual engaged in the promotion or expression of a radical belief system demonstrative of enculturation on or off-line, and used technology as a platform for exposure to information on ways to engage in attacks and extremist activity generally. Additionally, any interactions between the actor and individuals within any radical movement to peer associations and subcultural connectivity were considered in keeping with prior research on social organization (Adler & Adler, 2005; Best & Luckenbill, 1994; Decker et al., 1998; Holt, 2009; Holt, 2013). A case study template was created consisting of a series of questions that tapped into all of these issues (see Appendix 1 for detail). The collected open source information on each of these items was used to complete the template for each actor demonstrating their associations to others on or off-line, the extent of their enculturation, and actions on or off-line.

Findings

The results of each case study are presented in alphabetical order, and highlighted the social relationships between actors, their subcultural connectivity and expression of beliefs, norms or values, and the influence of technology on radicalization process. Quotes are presented where appropriate to demonstrate the actor's activities.

Table 2 Document counts for case studies

Name	Source Type Official documents	News	Other website/ blog	Scholarly work	Watch goup	Total
Omar Matteen	3	72	0	1	0	76
Dylann Roof	2	33	5	0	3	43
Tsarnaev Brothers	0	14	3	2	0	19
Total	5	119	8	3	3	138

Case 1: Omar Mateen

The first case study involves the mass shooting which occurred in the gay nightclub Pulse in Orlando Florida on June 12, 2016. The shooter, Omar Mateen, had no immediate prior affiliation with any known terrorist group. He had, however, been placed on the FBI's Terrorist Screening Database due to threats of violence made toward coworkers as well claims that he joined Hezbollah, while his family had ties to al-Qaeada. A 10-month investigation by the FBI found no substantive evidence to support he was a threat, though it was determined he knew an American Muslim who had traveled to Syria and then committed a suicide bombing in May 2014.

When Mateen attacked the Pulse club, killing 49 people, he repeatedly made statements to victims, 911 operators, and an Orlando news station that he pledged allegiance to ISIS (911 Call and ODP Negotiation Transcript, 2016. During his 911 call, he stated that the death of Abu Wahib, an ISIS leader killed during a US air strike, was what triggered the attack. He also made mention of the Boston Marathon bombers by calling Tamerlan Tsarnaev his "homeboy." Mateen also referenced Moner Mohammad Abu-Salha who was the first American-born suicide bomber that died during an attack in Syria (911 Call and ODP Negotiation Transcript, 2016). Abu-Salha attended the same mosque as Mateen, though they appeared to have no actual relationship. As a result of the lack of actual connections between Mateen and these actors, law enforcement and intelligence agencies were unclear as to the extent to which Mateen was engaged with organized jihadist groups or simply self-radicalized (Shabad, 2016).

Mateen has been classified as a loner by researchers and the media due to a lack of associations to ISIS or others in the real world (Hamm & Spaaij, 2017).[2] Examining his on-line activities would appear to support such a definition as he appeared to have limited engagement with radical jihadist groups on-line (Ross, Schwartz, Dukakis, & Ferran, 2016). The majority of his activities involved open web searches for Islamic State websites and content. Specifically he was trying to find a speech made by the ISIS leader Abu Bar al-Baghdadi (Ross et al., 2016), and watched videos by Al Qaeda propagandist Anwar al-Awlaki (Hennessey-Fiske, Jarvie, & Quentin, 2016). In fact, he mentioned to a friend, Mohammad Malik, that he found al-Awlaki's videos to be "very powerful" (Gutierrez & Ortiz, 2016). As a result, Malik reported this to the FBI as he felt it "raised a red flag" (Gutierrez & Ortiz, 2016). Mateen also actively sought out information on the San Bernadino terrorist attacks via Facebook, and watched videos uploaded by radical groups, including beheadings of various people (Goldman, 2016; Wilber, 2016).

Mateen made several posts on Facebook the day that he engaged in the shooting, associated with various accounts he made. For instance, he wrote: "You kill innocent women and children by doing us [SIC] airstrikes.now taste the Islamic state vengeance… In the next few days you will see attacks from the Islamic State in the usa [SIC]" (Ross et al., 2016). Mateen also wrote "America and Russia stop bombing the

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[2] At the time of the development of this study, there was insufficient material available in open source documents to justify the inclusion of Noor Salman, Omar Mateen's wife, in the analysis. Though she has been charged with obstruction of justice and aiding and abetting Mateen's attack, there is insufficient information currently available in publicly accessible documents to describe her direct or indirect role in the planning or execution of the shooting (e.g. Mazzei & Goldman, 2018). Thus, we excluded her from the analysis, and any family or friends of the other cases included. We chose to only focus on the direct actors involved in the execution of the offense for the sake of analytical parsimony.

Islamic State" as well as a statement pledging allegiance to the leader of ISIL: "I pledge my alliance to abu bakr al Baghdadi [SIC].may Allah accept me. The real muslims will never accept the filthy ways of the west" (Zimmerman, 2016). While these posts were deleted, it appears that Mateen made some overt expressions of sympathy to Islamic terror group positions.

As a result, Mateen was exposed to radical messaging on-line which enabled him to self-radicalize. The connections made to radical jihadism appear to be a function of self-selection and minimal involvement with the larger ISIS movement and subculture via any broad-based communications platform or group. In this respect, it may be accurate to classify him as a loner not only in terms of his violent actions, but also his radicalization within the Best and Luckenbill (1994) framework. Mateen's on-line connections were very brief, and he had no direct engagement with others, nor any expression of subcultural values or beliefs until shortly before the attack.

Case 2: Dylann Storm Roof

Dylann Storm Roof entered the Emanuel African Methodist Episcopal Church in Charleston, South Carolina on the morning of June 17, 2015 during a prayer service. He shot and killed nine African Americans in the room, as well as injuring another person. Throughout the shooting spree, he shouted racial epithets and comments, including "I have to do it. You rape our women and you're taking over our country. And you have to go" (Glenza, 2015). Roof fled the scene and was arrested the next morning in Shelby, North Carolina. When questioned as to his motive for the attack, he stated he was trying to start a race war. Roof was also in possession of two handwritten manifestos explaining his racial beliefs and a list of churches that could serve as other potential targets (Glenza, 2015).

Roof had a history of drug and alcohol abuse, and had two prior contacts with police prior to the shooting. Friends and relatives reported that he had become socially withdrawn, espousing racist ideologies and indicating an interest in committing an attack against a school or shopping mall. It was thought that he targeted this particular church because of its convenience and location. Based on these details, Roof was arguably either a loner or a lone wolf shooter with no ties to existing extremist groups (Hamm & Spaaij, 2017). His online behaviors indicated he had potentially racist beliefs, as he opened a Facebook account a month before the shooting. Roof deliberately ensured he had 88 friends on his Facebook profile despite several of them being African American (Harnden, 2015). This was done as a nod to the on-line representation of "Heil Hitler" as 88 in white nationalist communities (Harnden, 2015). Roof's profile also featured pictures of himself holding white power flags, wearing a jacket with the apartheid-era South African and Rhodesian national flags, and wearing a No88 T-shirt. A picture was also posted of the number 88 written in the sand on a beach.

Roof also created and owned a website titled *The Last Rhodesian*, which he began in February 2015. The title was a reference to the racist Rhodesia regime, operating in Africa during the Apartheid period. The site featured multiple photos of Roof with guns, confederate flags, and other symbols of both the neo-Nazi and white supremacist movements (Harnden, 2015). Roof also posted photos of himself at Confederate heritage sites and slavery museums in an attempt to show his pride in his race. He also utilized common on-line argot of the white supremacist movement, such as 1488, in photos and posts on the site.

Roof also published a manifesto on the site which detailed his views as a white supremacist. The document suggests he was likely radicalized as a result of exposure to on-line ideologies rather than other sources. Though there is some limited evidence his father may have had racist or extreme views on race relations, Roof began the manifesto by writing "I was not raised in a racist home or environment" (Robles & Stewart, 2015). Instead, he claimed his views developed after the 2012 shooting death of Trayvon Martin. Roof wrote that Zimmerman, who fatally shot Martin, was in the right. Roof said he had not realized what an issue interracial crime was in the US. This prompted him to search on-line, writing:

> The first website I came to was the Council of Conservative Citizens. There were pages upon pages of these brutal black on white murders… At this moment I realized that something was very wrong.

He also stated that he selected Charleston because of its racial disparity and "We have no skinheads, no real KKK, no one doing anything but talking on the Internet. Well someone has to have the bravery to take it to the real world and I guess that has to be me." (Robles & Stewart, 2015).

Though there was no evidence he had a formal relationship to the Council of Conservative Citizens, he appeared to have posted on the neo-Nazi website Stormfront under the username LilAryan (Morlin, 2017). Roof's posts seem to be limited to February 17, 2015, regarding a 1993 documentary on skinhead groups. In one post he stated:

> I wanted to say that I enjoy this documentary [*Skinheads USA: Soldiers of the Race War*]. There have been multiple threads on this documentary and most say it portrays White Nationalists badly. I dont [SIC] really see this. Yes they are living in squalor, but they are all true White Nationalists.

> I enjoyed it very much and am in the process of trying to find it on DVD, which seems extremely rare. I could just download it, but I want to own it.

> Also on some of the older threads people say that Bill Riccio is/was a snitch. But in one of the older threads a post from a friend of Bill's says he isnt [SIC] and its a lie.

> Id love to see a link or some proof that Bill is a snitch.

Court testimony from the FBI indicated that Roof used his Stormfront account to send seven private messages to Stormfront users living in the Columbia, S.C., area, including his personal information to facilitate meetings. It was not clarified as to whether any meetings were arranged as a result of the messages (Morlin, 2017).

Roof also participated in the white supremacist website The Daily Stormer's forum under the username "AryanBlood1488." He made a range of posts, including comments on the nature of Jewish identities and the following diatribe regarding the need for whites to defend themselves:

> These days White people are not allowed to defend themselves. If a black attacks you, the establishment wants you to think you should lay down and take it. Thats

what they really want, they just want us to roll over and die. If you do defend yourselves, then you are automatically the aggressor, and may get charged with a hate crime yourself, even though you were defending yourself from a hate crime. Its pretty sick stuff. Anytime white people have defended themselves in history, whether it be through segregation, the KKK, the Crusades, it is made out to be that we are the agressors, when in reality we are the most persecuted people on Earth. But one of white people strengths is that we dont see ourselves as victims like all the other races.

He also made comments regarding the Council of Conservative Citizens in keeping with the ideas expressed in his manifesto:

I have serious, great respect for the CofCC because they are the ones who woke me up to black on white crime in the beginning. It was the first site I went to the day that changed my life, the day I decided to type in 'black on white crime' into Google.

Roof's participation in extremist group forums suggests that while he may have self-radicalized to some extent, he also established connections to the broader on-line subculture of the far right (Robles & Stewart, 2015). Calling him a lone wolf on the basis of his violent actions alone may be correct, but this ignores his involvement in the subculture and expression of on-line jargon. As such, it is more appropriate to consider Roof to have been radicalized as a result of collegial associations within the Best and Luckenbill (1994) framework due to the online relationships that enabled his beliefs.

Case 3: The Tsarnaev Brothers

The third and final case involves two individuals: 26 year old Tamerlan Tsarnaev and his 19 year old brother Dzhokhar. These two Chechen immigrants to the US used home-made pressure cookers as bombs and planted them on Boylston Street in Boston, Massachusetts along the route of the Boston Marathon on April 15, 2013. Once detonated, the bombs caused three deaths and injured over 260 persons due to the massive crowds assembled for the race. Due to the extremely public nature of their target, the brothers were quickly identified by law enforcement on April 18 (McPhee, 2017). That same day, the Tsarnaevs engaged in a shootout with police after killing a police officer and carjacking a civilian's vehicle. Tamerlan was shot multiple times during the fight with police, and was subsequently run over by his brother in an attempt to flee the scene. While Tamerlan died, a manhunt for Dzhokar began on April 19 and ended the same day after being identified on a boat. He was shot in the scuffle with police and arrested, and subsequently prosecuted on 30 federal charges associated with the bombing and related crimes. Dzhokar was found guilty and was sentenced to death by lethal injection on June 24, 2015 (McPhee, 2017).

Researchers argue the Tsarnaevs were lone wolves based on their activities in the real world (Hamm & Spaaij, 2017), though they present an interesting case as they appear to have partially radicalized on their own via on-line information, as well as via real world relational networks. The brothers were Muslim by birth, and raised in the Russian Caucasus but emigrated to the US in 2002, settling in Massachusetts. Tamerlan briefly attended a community college but dropped out in an attempt to become a boxer (Jacobs, Filipov, & Wen, 2013). He had some difficulty being accepted by Americans,

and adopting American cultural norms, which may have played a role in his increased acceptance of his Muslim religious identity. Family members reported he became more devout and religious in 2008, attending the Islamic Society of Boston Mosque and quitting both drinking and smoking (Jacobs et al., 2013).[71]

Tamerlan came to the attention of the Russian Federal Security Service (FSB) in 2010 when William Plotnikov, an Islamic radical who traveled to Dagestan to engage in civil conflict, was detained by officers (McPhee, 2017). Plotnikov indicated he knew Tamerlan based on physical and on-line associations, though official sources do not indicate how deep their connection may have been. The FSB reportedly contacted the FBI in 2011, providing intelligence that Tamerlan was attempting to travel to Russia to train with radical groups there (McPhee, 2017). After an investigation by FBI agents, no evidence was found to support Tsarnaev's involvement in terrorist activities. The case was closed after the FSB provided no additional information to support their claims.

Tsarnaev then traveled to Russia and the Caucasus from January to July 2012. While there, he met with family and friends, including a cousin who was heavily involved in the Islamic community in Dagestan. He also made repeated visits to a Salafi mosque associated with Islamic militants, and left the country two days after two of his contacts were killed by police. Upon returning to the US, family and friends noted he had grown a beard, and began to express great religious piety. In fact, some of his family became concerned that he had become an extremist as a result of the trip (McPhee, 2017).

There is evidence that Tamerlan may have been radicalized on-line prior to traveling, specifically through his participation in the online World Association of Muslim Youth website, which included a great deal of propaganda from Al Qaeda sympathizers (McPhee, 2017). Through this site, he was able to engage William Plotnikov in regular communication (Harding & Dodd, 2013). He also used both Skype and VK, a Russian social networking site, to keep in contact with his cousin, Magomed Kartashov, who lived in Russia (McPhee, 2017). Kartashov led a radical Muslim group called Union of the Just, which does not condemn violence committed by radical Islamists.

After returning to the US, Tamerlan became actively involved in searching out extremist content on-line. He created a YouTube channel with links to Salafist and Islamist videos, including rants by jihadist clerics and a post describing the Millenarian prophecy (Forester, 2013; Harding & Dodd, 2013). One of these videos featured a Dagestani Islamic militant, while another included comments from a radical cleric. Tamerlan also frequently sought and read extremist websites and the AQAP magazine Inspire which served as the basis for their method of attack. The brothers acquired the information needed to build the explosive devices via articles published in the magazine Inspire (Cooper, Schmidt, & Schmidt, 2013). Dzhokhar reported their source to police after his arrest, indicating they accessed the English language version of the magazine, though it is unclear who accessed that content (Cooper et al., 2013).

When he was at UMass Dartmouth, Dzhokhar maintained online contact with his brother while he was in Dagestan in early 2012. In the email communications, Tamerlan shared extremist materials with his brother, sending him "online links and materials about the jihad in Chechnya and Dagestan and the mujahedin's interpretation of Islam" to which Dzhokhar responded with short, apparently uninterested emails (McPhee, 2017: 55).

While Tamerlan has a more identifiable history of radicalization that may have driven his willingness to engage in the attack, his brother Dzhokhar appears to have simply served as an assistant rather than as a committed ideologue. Family members

interviewed after the incident suggested that Dzhokhar looked up to his brother, and may have followed his path because of respect for Tamerlan's beliefs (Jacobs et al., 2013; McPhee, 2017). For instance, Dzhokar told police that he and his brother were partially radicalized by watching lectures by Anwar al-Awlaki on-line (Jacobs et al., 2013; McPhee, 2017).

There were, however, limited instances where Dzhokhar expressed his ideological beliefs via social media. He maintained a profile on the Russian-language social media site VK and posted videos of the Syrian civil war as well as links to Islamic websites (Abad-Santos, 2013). He also made anti-American posts on Facebook, writing: "September 10th baby, you know tomorrow is. Party at my house! #thingsyoudontyellwhenenteringaroom." Dzhokhar also had a Twitter account under the handle @J_Tsar, which he acquired in 2011 and where he largely posted about normal teenaged life. On this account, he also used an avatar of a lion, a symbol among young jihadists, and tweeted questionable things on his account such as a post in Russian saying that he would die young (Abad-Santos, 2013). The "dying young" tweet was posted almost a year before the bombings. All 1046 tweets made from his original Twitter account, @J_Tsar, remain online. Over the course of a year, Dzhokar largely tweeted about classes, smoking marijuana, and jokes. Interspersed among the daily travails of a college student, Dzhokhar noted his growing discontent with the United States, American perceptions of Islam, and his increasing religiosity. On their face however, Dzhokhar's tweets did not appear to indicate that he was necessarily becoming increasingly radical.

He continued to tweet after the bombing until his arrest, though the content of the messages were neither inherently radical nor extreme. For instance, he posted "Ain't no love in the heart of the city, stay safe people" only two hours after the bombing occurred. The following day, he posted tweets including: "So then I says to him, I says, relax bro my beard is not loaded", and "Nowadays everybody wanna talk like they got somethin to say but nothin comes out when they move their lips; just a bunch of gibberish," which is a quote from the rapper Eminem. A day after the bombing, Dzhokhar also "liked" a tweet from an account called "Death," @GMCoderGoddi. It read: "The ultimate sacrifice is within you, the battle within is defined by the word jihad."

Finally, there is some evidence he maintained a separate twitter account from his actual identity using the handle @Al_Firdausi to post extremist comments. He created the account a month before the bombing and only made seven tweets from the account, all in the early morning hours of a few days in mid-March 2012. The messages all involved Islam and the glory of Allah, though they made no mention of violence or extremism. The only real message evocative of his potential radicalization was the tweet: "Listen to Anwar al Awlaki's (a shaheed iA) the here after series, you will gain an unbelievable amount of knowledge #islam #muslim".

Aside from advocating 9/11 conspiracy theories, Dzokhar's support of Anwar al-Awlaki proved to probably be the most extremist statement he had ever made online. In the weeks before the bombing, Dzhokhar posted a video on his VK.com account "about the carnage in Syria that ended with the line 'Syria is calling. We will answer.'" (Gessen, 2015). While Dzhokhar certainly made public posts hinting at his growing radical mindset, Dzhokhar's online behavior did not overtly evidence his embrace of radical Islamist extremism. Even his most overt statements were posted to a "secret" Twitter account. While Dzhokhar openly expressed controversial opinions about 9/11 as well as his increasing discontent with America to his friends, he clearly went out of

his way making a secret account to hide his favorable views of Anwar al-Awlaki from his friends (Gessen, 2015).

Taking all of this information into account, the Tsarnaevs' radicalization process fits within the peers category of the Best and Luckenbill (1994) framework. Both actors appear to have engaged with the larger subculture of jihad online and expressed ideological beliefs and sentiment via Twitter, Facebook, or other sites. Their mutual and many associations with the overall movement, including recognized radical groups, appears to have influenced their real world activities and decision to engage in bombings against a high-profile target. Finally, the brothers' mutual participation in the radicalization process suggests they are appropriately classified as peers rather than colleagues.

Discussion and Conclusion

Though terrorism research has increased substantially, attempts to classify attacker behavior on the basis of their beliefs and actions have developed in a piecemeal fashion. Current terrorism typologies focus primarily on the actor and their practices when engaging in acts of violence (Bates, 2012; Hamm & Spaaij, 2017; Pantucci, 2011; Phillips & Pohl, 2012; Spaaij, 2012). These frameworks are invaluable to understand acts of violence, but do not provide much insight into the radicalization process, or the influence of social ties to enable the experience. Such research is critical as the emergence of the Internet and social media has flattened access to radical ideologies, rendering it difficult to discern the extent to which individuals are truly involved in an extremist group, or simply suggest their adherence to its beliefs.

There is a need for a theoretically driven model of radicalization considering individual social ties on and off-line to better identify associations to offender groups and subcultures, as well as the relationship between radicalization and participation in violence. Such a framework is essential to better map the practices of terrorists to other forms of crime and deviance, and highlight differences in their involvement in subcultures operating on and off-line (Best & Luckenbill, 1994; Decker et al., 1998; Holt, 2009, 2013). Thus, this research applied the Best and Luckenbill (1994) social organization framework to understand the radicalization processes of four loner or lone wolf terrorists.

The findings suggest that this framework provides substantial granularity to assess radicalization on the basis of an individual's engagement with a broader community of extremists on or off-line. For instance, Omar Mateen would be classified as a loner within this model due to the absence of any expression of acceptance of an ideology in on-line or off-line spaces prior to his attack. The lack of ties present to facilitate radicalization reinforces the findings of existing typologies of lone actor radical violence, demonstrating the utility of separating radicalization and violence into separate frameworks (Bates, 2012; Hamm & Spaaij, 2017; Pantucci, 2011; Phillips & Pohl, 2012; Spaaij, 2012).

Dylann Roof, however, would be deemed to have been radicalized through a collegial process because of his posting behaviors in on-line extremist forums in the year prior to his attack. His engagement with others in these communities and posting behaviors on social media demonstrate an outward acceptance of subcultural values expressed by far-right groups. Roof's associations with others in on-line spaces demonstrate he was radicalized via social relationships, though he offended alone as per existing typologies of violence (Bates, 2012; Hamm & Spaaij, 2017; Pantucci, 2011; Phillips & Pohl, 2012; Spaaij, 2012).

Similarly, the Tsarnaevs would constitute peers in terms of radicalization within the Best and Luckenbill (1994) framework, though violent typologies consider them to be lone wolves. Tamerlan had substantive relationships with others engaged in an Islamic radical ideology on and off-line, demonstrating that he had mutual associations with offenders. There are suspicions he may have received training during his trip to Russia and the Caucuses that occurred shortly before he committed the bombing attack. Dzhokhar's relationship to Tamerlan and on-line exposure to radical materials further supports the role of mutual association, and his own posts on social media suggest acceptance of subcultural beliefs. The fact that Tamerlan also actively attempted to radicalize his brother reinforces the notion that there was direct participation in the process of radicalization supporting the peer classification.

Taken as a whole, the Best and Luckenbill (1994) sociological model may provide greater conceptual clarity and refinement when characterizing the radicalization process of terrorists and extremist actors. The case studies examined here demonstrate the nuanced role of both personal interest in radical ideas, and on and off-line relationships that shape individual acceptance of these ideas. Though Omar Mateen appeared to have radicalized almost entirely alone, the remaining three cases demonstrate that even casual social ties to individuals involved in radical movements increased exposure to ideological beliefs.

These findings also demonstrate the need for policies to minimize the influence of radicalizing forces on individuals, be they from on or off-line sources (e.g. Gill et al., 2017; Szmania & Fincher, 2017). Aggregated data analytics may be a potential solution, as user behavior acquired from Internet Service Providers, such as sites visited and keyword searches, coupled with social media posting behaviors could have illustrated his interest in jihadist materials. The privacy issues inherent in such invasive data acquisition may, however, be excessive and provide false positives that may render such a strategy ineffective. Instead, there may be greater value in increasing the presence of messaging produced by advocacy groups and entities designed to counter violent extremist narratives on social media sites and in real world public spaces (see also Gill et al., 2017). Such strategies could help individuals recognize they are not alone and provide potential touch points to increase social cohesion and attachment to prosocial others that may decrease the risk of radicalization to violence.

The limited sample size of this study requires additional data to replicate and validate the utility of this framework. Analyses of a larger sample of loner and lone wolf attacks performed before and after the broader acceptance of social media sites like Facebook may provide greater insights into the social organization of the radicalization process. Developing a more robust set of cases based on ideology also essential to improve our understanding of the role that jihadist, far-right, or far-left sentiments play in the organization of radicalization. For instance, calls by jihadist groups increasingly urge individuals to mobilize and attack Western targets despite a lack of direct ties to an organization or economic support (e.g. Antinoria, 2017). Such messaging via social media and websites may directly increase the potential for radicalization taking the form of loners from Best and Luckenbill's framework compared to far right actors.

Sampling on more complex attacks and incidents involving both on and off-line associations is also essential to examine the way in which cellular attack structures are shaped by differential acceptance of radical ideologies. For example, the Paris Bataclan attacks involved strategic planning over time and specific technologies during the attack for it to be successful (Davis et al., 2017). The extent to which they engaged

each other or a broader subculture on-line prior to the incident requires further analyses to understand how participants were radicalized, and the influence of actors within and outside of the cell.

The use of various analytic strategies could also greatly assist the empirical validation of the Best and Luckenbill (1994) framework as well. Traditionally, researchers have used qualitative methods to test this framework (Adler & Adler, 2005; Decker et al., 1998; Holt, 2009, 2013), though the use of large scale existing quantitative data sets such as the Global Terrorism Database (GTD) or ECDB may be useful. Their longitudinal data and diverse ideological spectrum could be invaluable to document any changes in patterns of organization within and across the ideological spectrum over time. In turn, this will further validate the utility of the framework and aid in refining our understanding of the factors influencing radicalization to violent acts of terror and extremism generally.

Appendix: Case Study Template

Name:
  Total documents identified:
  Provide count of documents by type/category:

1. Please provide a timeline and overview life-history of the selected individual, from birth until final arrest (e.g., family, work, friends, mental health, military experience, prison) or death (dependent on the outcome of the incident).

2. General on-line involvement

   a. what sites did they have accounts on, or appear to participate in?
   b. how many of these sites were part of a radical/extremist ideology?

3. Emergence of the appearance of radicalization/acceptance of an extremist ideology

   a. off-line signs/markers

      i. Dates, locations, assessments provided by family, friends?
   b. on-line signs/markers

      i. Posting behaviors, what sites, dates?

4. The process of entry into the extremist movement and/or radicalization process
      a. What were the sources of their exposure to extremist ideology and what seemed to be most important and why?

     i.   Was there an initial push into a search for extremist materials or ideology?

         1.   Negative social interaction with peer group?
         2.   Negative familial development (divorce, death of parent, etc)?
         3.   Individual failure at any pro-social activity (sports, employment, school)?
     ii.   Was there an initial pull into searching for extremist materials or ideology?

         1.   Contact with a recruiter
         2.   Contact with someone else who was interested in extremist ideology

a.   Was this individual a friend, family member, or someone else?
5.   What was their peer/collegial involvement like?
6.   Did they socialize frequently with other peers generally?
7.   Was this primarily on- or off-line?
8.   Did they socialize frequently with others who are in extremist movements?
9.   Was this primarily on- or off-line?

     a.   Is the individual strongly attached with their parents/grandparents?
     b.   Is the individual strongly attached with other family members?
     c.   Is the individual married prior to joining an extremist movement / radicalizing?
     d.   Is the individual strongly attached with religious groups or leaders?

        i.   Do the religious groups or leaders share an extremist ideology?
     e.   as the individual strongly attached to peers; i.e., do they have a strong peer group?

        i.   Are the preponderance of individuals in this peer group involved in delinquent activities?

1.   To what extent of seriousness were these activities (i.e. mostly misdemeanors or felonies)?
     ii.   Are any of the individuals in this peer group also interested in extremist ideology?

1.   on or off-line?
     iii.   Are any of these individuals in this peer group also involved in extremist activity?

1.   on or off-line?

10.   Did their behavior change as a function of exposure to ideological materials on or off-line?

     i.   Was there a noticeable change in behavior before and after their interest in
     ii.   extremist ideology/materials?

        1.   Off-line
        2.   On-line

iii. Was there a noticeable change in behavior before and after their joining of an extremist group/movement (if they did so)?

    1. Off-line
    2. On-line

iv. Did the actor openly indicate the need to take action or use violence to further their ideology or achieve some goal?

    1. Off-line
    2. On-line
    3. Did they have social media accounts?
    4. Did they have discussion forum accounts? If so, what/where?

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